

REMARKS

I. Rejections under 35 U.S.C. § 103

1. The Examiner has rejected Claims 50-53 and 57 under 35 U.S.C. §103(a) as being unpatentable over the non-patent literature, Bayliss, in view of Blidschun (US 4,680,163), Peltier (US 5,382,410) and Berkeley (US 3,832,459). The rejections are respectfully traversed.

The claimed method of decontamination comprises "spraying an electrically charged photosensitizer having aerosol droplets projected in a stream towards an object, said aerosol droplets being greater than 50 μ m in diameter onto the contaminated surface." Bayliss, Blidschun, Peltier and Berkeley, taken alone or in combination, do not teach this claimed feature.

Spraying onto Contaminated Surface

Baylis is not about "spraying" at all. Accordingly, Baylis is non-analogous.

Blidschun also fails to teach the claimed "spraying." Droplet transport in Blidschun is not by "spraying" but by convection of entrained droplets and by electrostatic attraction. Column 3, Lines 1-4 ("The electrostatic field causes the exceedingly small charged droplets which form the mist of sterilizing agent to be conveyed to the surface which is to be sterilized."). Accordingly, Blidschun is also non-analogous.

Peltier also fails to teach the claimed "spraying ... onto the contaminated surface." In Peltier, vapors and aerosols are released "into the air or air stream" so that the "molecules kinetically interact[] with the air molecules and airborne particles, such as dust." Column 8, Lines 46-51. There is not even a surface to be treated. Accordingly, Peltier is also non-analogous.

Droplets being Greater than 50 μ m

Baylis does not even mention the claimed “electrically charged” droplets or “droplets being greater than 50 μ m.”

Blidschun also fails to disclose the claimed “droplets being greater than 50 μ m,” and indeed teaches away therefrom. Blidschun teaches use of ultrasonic energy “in order to provide extremely small droplets.” Column 2, Line 58-60. The droplets are “less than 10 μ m and preferably in the range of 2-4 μ m.” Column 3, Lines 29-33. In Blidschun small interstitial areas remain unwetted between the extremely small droplets. Column 3, Lines 5-9 (“The small interstitial areas which remain between these exceedingly small droplets which in theory remain unwetted, do not offer the micro-organisms which are to be destroyed sufficient room to evade the sterilizing agent.”). Blidschun expressly argues that large droplets of the prior art “in the range of 50-150 μ m” do not have the benefit of such a small interstice. Column 3, Lines 17-24. Accordingly, Blidschun expressly teaches away from the claimed “droplets being greater than 50 μ m”

Peltier also fails to disclose the claimed “droplets being greater than 50 μ m.” Indeed, not only does Peltier fail to disclose this claimed feature, it in effect teaches away therefrom. Peltier uses a “vaporizing emitter” to provide “vapors and microaerosols.” Column 2, Lines 38-41; Column 8, Lines 34-35. Although Peltier does not explicitly mention the range of the “vapors” or “microaerosols,” the term “vapors” and “microaerosols” are believed to indicate their sizes to be small enough and Peltier’s wick emitter would not expect to produce droplets larger than a few micrometers. In addition, contrary to the claimed droplets being sprayed “onto the contaminated surface,” the vapors and aerosols in Peltier are intended to be released

“into the air or air stream” so that the “molecules kinetically interact[] with the air molecules and airborne particles, such as dust.” Column 8, Lines 46-51. Such vapors and aerosols to be released in to the air are believed to have to be small enough. Therefore, Peltier indeed teaches away from the claimed “droplets being greater than 50 μm .”

The Examiner contends that Berkeley “discloses that aerosol disinfectant surface sprays utilize particle diameters greater than 50 microns.” However, Berkeley does not utilize particle diameters greater than 50 microns. Instead, Berkeley teaches “space sprays forming finely atomized mists or clouds.” Column 3, Lines 50-51. In addition, Berkeley explicitly teaches away from the claimed droplets being greater than 50 μm . Column 6, Line 55 (“a coarse droplet spray which is not desirable.”) (Emphases added).

Accordingly, it is respectfully submitted that none of Bayliss, Blidschun, Peltier and Berkeley teaches the claimed “spraying electrically charged photosensitizer having aerosol droplets ... being greater than 50 μm in diameter onto the contaminated surface.” In addition, indeed Blidschun, Peltier and Berkely teach away from the claimed “droplets being greater than 50 μm in diameter.”

Even assuming, for arguments, that Berkeley teaches particle diameters greater than 50 microns as the Examiner contends, it would not have been obvious to combine Bayliss, Blidschun, Peltier and Berkeley to produce the claimed invention for the reasons set forth below.

“If proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” MPEP §2143.01(VI) citing *In re Gordon*,

733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (emphasis added). “Prima facie case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention.” MPEP §2144.05 (III) citing *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997).

Because Blidschun and Peltier require droplet particles to be small in diameters (“less than 10 μm ” or “vapors and microaerosols”) in electrically charged spray applications, the spraying of electrically charged droplets of Blidschun and Peltier cannot be modified or combined to incorporate droplet sizes greater than 50 μm without fundamental change of operation.

Therefore, not only does Bayliss, Blidschun, Peltier and Berkeley fail to show the claimed “droplets being greater than 50 μm ,” but Blidschun and Peltier indeed teaches away from the claimed combination of “spraying an electrically charged photosensitizer” and droplet sizes “greater than 50 μm .” Accordingly, it is respectfully submitted that Claim 50 and its dependent claims should be found allowable over Bayliss, Blidschun, Peltier and Berkeley.

2. The Examiner has rejected Claims 54 and 55 under 35 U.S.C. §103(a) as being unpatentable over Bayliss, in view of Blidschun, Peltier and Berkeley, and further in view of Horowitz (US 5,232,844). Specifically, the Examiner contends that Horowitz teaches an illumination with a “continuous beam” as claimed in Claim 54.

However, because none of Bayliss, Blidschun, Peltier and Berkeley shows the claimed “droplets being greater than 50 μm ,” and moreover Blidschun and Peltier indeed teaches away from the combination of “spraying an electrically charged photosensitizer” and droplet sizes

“greater than 50 μm ” as claimed in Claim 50 as discussed above, it is respectfully submitted that Claims 54 and 55 depending from Claim 50 should also be found allowable over Bayliss, Blidschun, Peltier, Berkeley and Horowitz, irrespective of whether Horowitz teaches a “continuous beam” as claimed in Claim 54 or 55.

3. The Examiner has rejected Claims 56 and 58 under 35 U.S.C. §103(a) as being unpatentable over Bayliss, in view of Blidschun, Peltier and Berkeley, and further in view of Bowing (US 4,051,058). Specifically, the Examiner contends that Bowing teaches a “surfactant” or “solid or liquid carrier” as claimed in Claim 56 or 58.

However, because none of Bayliss, Blidschun, Peltier and Berkeley shows the claimed “droplets being greater than 50 μm ,” and moreover Blidschun and Peltier indeed teaches away from the combination of “spraying an electrically charged photosensitizer” and droplet sizes “greater than 50 μm ” as claimed in Claim 50 as discussed above, it is respectfully submitted that Claims 56 and 58 depending from Claim 50 should also be found allowable over Bayliss, Blidschun, Peltier, Berkeley and Bowing, irrespective of whether Bowing teaches a “surfactant” or “carrier” as claimed in Claim 56 or 58.

4. The Examiner has rejected Claim 58 under 35 U.S.C. §103(a) as being unpatentable over Bayliss, in view of Blidschun, Peltier and Berkeley, and further in view of Richter (US 5,436,008). Specifically, the Examiner contends that Richter teaches a “solid or liquid carrier” as claimed in Claim 58.

However, because none of Bayliss, Blidschun, Peltier and Berkeley shows the claimed “droplets being greater than 50 μm ,” and moreover Blidschun and Peltier indeed teaches away from the combination of “spraying an electrically charged photosensitizer” and droplet sizes “greater than 50 μm ” as claimed in Claim 50 as discussed above, it is respectfully submitted that Claim 58 depending from Claim 50 should also be found allowable over Bayliss, Blidschun, Peltier, Berkeley and Richter, irrespective of whether Richter teaches a “carrier” as claimed in Claim 58.

5. The Examiner has rejected Claims 59 and 60 under 35 U.S.C. §103(a) as being unpatentable over Bayliss, in view of Blidschun, Peltier and Berkeley, and further in view of Dingus (US 5,670,469). Specifically, the Examiner contends that Richter teaches a “portable sprayer” as claimed in Claim 59.

However, because none of Bayliss, Blidschun, Peltier and Berkeley shows the claimed “droplets being greater than 50 μm ,” and moreover Blidschun and Peltier indeed teaches away from the combination of “spraying an electrically charged photosensitizer” and droplet sizes “greater than 50 μm ” as claimed in Claim 50 as discussed above, it is respectfully submitted that Claims 59 and 60 depending from Claim 50 should also be found allowable over Bayliss, Blidschun, Peltier, Berkeley and Dingus, irrespective of whether Dingus teaches a “portable sprayer” as claimed in Claim 59 or 60.


VI. Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

By:



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